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February 10, 2016

DCN No.: T501-15-10-004-DCN0061

Mr. Mike Towle, OSC
US EPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Letter Report: Removal Assessment - Groundwater and Soil Gas Sampling Activities – November to December 2015, Queen Street VOC Site, Martinsburg, Berkeley County, WV; Technical Direction Document No. T501-15-10-004, EPA Contract Number EP-S3-15-03

Dear Mr. Towle:

This letter provides a summary of investigation activities and analytical results relating to groundwater and soil gas sampling that was conducted at the Queen Street VOC Site (Site), located in Martinsburg, Berkeley County, WV, in November and December 2015. The work was performed by the Superfund Technical Assessment and Response Team (START) - West contractor, TechLaw, Inc. (TechLaw), as part of a removal site evaluation.

Site Description

The Queen Street VOC site is an unknown source of possible chlorinated volatile organic compound (VOC) contamination suspected to be located near the intersection of North Queen Street and Lambert Street (currently named Cloud Street), in Martinsburg, WV. The Site is located in a commercial area which includes a gasoline station/convenience store and strip mall to the north; a vacant grass lot to the east; a restaurant to the south; and a farm supply store to the west across North Queen Street (Figures 1 and 2).

Background

The Site was discovered during the course of a Leaking Underground Storage Tank (LUST) investigation at a gasoline station located near the intersection of North Queen Street and Lambert Street. Two 12,000-gallon underground storage tanks (UST), originally installed in 1964, were removed and replaced with new upgraded USTs at the gasoline station in 1998. Petroleum contamination and perched water were encountered during the UST removal process. Approximately 674 tons of contaminated soil and 7,000 gallons of water were removed during cleanup activities. As a result, a State regulatory investigation was initiated under WV Leaking UST No. 98-034. Investigative activities related to the LUST removal identified subsurface soil and groundwater contamination consisting of petroleum hydrocarbons, including gasoline range organics (GRO), benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE). Additionally, analysis of soil gas samples indicated the presence of tetrachloroethene (a.k.a., PCE) in two of three soil gas samples (SG-2 and SG-3) in addition to the common gasoline-related constituents (TEC, 2012). PCE, which is not a gasoline-related constituent, was detected in soil gas samples collected in front of the Site building at concentrations as high as 3,700 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (TEC, 2012). Groundwater samples collected as part

of the investigation were only analyzed for gasoline-related constituents and were not analyzed for PCE or other chlorinated solvents. The report prepared for the investigation indicated that the groundwater contamination was migrating generally to the northwest (TEC, 2012).

At the request of the West Virginia Department of Environmental Protection (WVDEP), EPA commenced an investigation of the Site in 2014 to attempt to determine if groundwater at the Site had been impacted with PCE contamination. Thirteen groundwater monitoring wells had been installed by consultants for the property owner as part of the WVDEP LUST investigation that began in 1998. The EPA planned to collect groundwater samples from some of these wells. Many of the wells could not be accessed due to special five-sided bolts that were used to secure the well covers, which required a special tool to open. Six of the 13 monitoring wells were accessible for sampling. On December 2 - 3, 2014, EPA and START mobilized to the Site to conduct groundwater sampling. Groundwater samples were collected from the six accessible wells: MW-2, MW-6, MW-7, MW-11, MW-12, and MW-13 (refer to Figure 3). Analytical results for the groundwater samples indicated the presence of low concentrations of several gasoline-related constituents in well MW-2, which is located near the current UST field. Detected compounds in MW-2 included: benzene at 0.20 J micrograms per liter ($\mu\text{g}/\text{L}$); cyclohexane at 0.62 $\mu\text{g}/\text{L}$; isopropyl benzene (a.k.a. cumene) at 0.22 J $\mu\text{g}/\text{L}$; and MTBE at 0.97 $\mu\text{g}/\text{L}$. MTBE was also detected in MW-6 and MW-12 at 0.22 J $\mu\text{g}/\text{L}$ and 0.20 J $\mu\text{g}/\text{L}$, respectively. PCE and its breakdown products were not detected in any samples.

Site Geology and Hydrogeology

Refer to the TechLaw Letter prepared for the 2015 EPA investigation for information pertaining to Site geology and hydrogeology (TechLaw, 2015a).

Site Reconnaissance

On November 13, 2015, TechLaw mobilized to the Site to determine if monitoring well MW-1 and other wells located near soil gas well SG-3 could be accessed for sampling. These wells could not be accessed for sampling during the 2014 EPA investigation due to a special five-sided bolt that was used to secure the well cover. TechLaw purchased a special tool for removing the five-sided bolts prior to mobilizing to the Site. TechLaw was able to remove the well cover of monitoring well MW-1 using the tool; however, the bolt was severely corroded and the head broke off in the process of removing it. TechLaw attempted to open other previously inaccessible wells at the Site but could not remove the bolts without risking breaking the bolts. TechLaw measured the depth to water (DTW) and depth to bottom (DTB) for MW-1. Well depth information was used to determine the length of sample tubing that would be required and to estimate the volume of purge water that would be generated during sampling.

TechLaw also inspected the permanent soil gas wells (SG-1, SG-2, SG-3) that had been installed by contractors during the LUST investigation, to determine if soil gas samples could be collected from them. The installed soil gas wells consisted of 12-inch stainless steel screens set to depths between 2.7 and 3.1 ft. below ground surface (bgs) (depth to bottom of screen) and attached to $\frac{1}{4}$ -inch tubing, which extended to the surface. The tubing at the surface was stowed in a flush-mounted well casing (TEC, 2012). The above-ground tubing was crimped and/or cracked at discrete intervals and had been repaired with tape. It was determined that the tubing would need

to be cut below the cracked/taped portions before collecting samples. Photographic documentation of the site reconnaissance are presented in Attachment 5.

Sampling Activities

TechLaw prepared a Sampling QA/QC Work Plan (SQAP) Addendum to establish sampling procedures for collecting groundwater samples from selected monitoring wells and soil gas from soil gas wells and temporary soil gas implants. The SQAP also specified analytical parameters, methods, and quality assurance protocols for the project (TechLaw, 2015b). It was determined that groundwater samples would be collected from three monitoring wells - two wells that had been sampled during the previous EPA sampling event (MW-2 and MW-13) and from MW-1, which is located nearest to soil gas well SG-3. SG-3 had PCE detected in soil gas samples previously collected by contractors for the property owner. Additionally, the SQAP specified procedures for collecting soil gas samples from permanent soil gas wells SG-2, SG-3, and up to two temporary soil gas implants.

The primary objectives of the investigation were to determine if groundwater had been impacted by non-petroleum related contaminants, such as PCE and its breakdown products, and to determine if a contaminant source area was present in subsurface soil. Following approval of the SQAP by the OSC, TechLaw coordinated with EPA Region III Client Services Team (CST) to schedule analytical services.

TechLaw mobilized to the Site on December 9, 2015 and commenced groundwater and soil gas sampling activities on December 10, 2015. Photographic documentation of the sampling activities are presented in Attachment 5.

Groundwater Sampling Activities

The groundwater sampling was conducted on December 10, 2015 in accordance with the EPA-approved SQAP (TechLaw, 2015b). Groundwater sampling locations for this sampling event and the December 2014 sampling event are depicted in Figure 3. The DTW was measured in each well prior to commencing sampling to determine the well water volume. Depths to bottom of the wells had been measured during the site reconnaissance. Traditional three-well-volume purge sampling was conducted using a Monsoon submersible pump, controller, and polytetrafluoroethylene (PTFE)-lined tubing. Three well volumes of water were purged from each well prior to collecting the sample. After purging the required water volume from each well, the flow rate was reduced to approximate low-flow sampling rates (less than 0.5 liter per minute) to collect the samples. A total of seven samples were collected, including three groundwater well samples (MW-1, MW-2, and MW-13), one purge water (IDW) sample, and three field Quality Control (QC) samples (one field blank, one rinsate blank, and one trip blank). The groundwater samples were preserved with hydrochloric acid as specified in the approved SQAP, packaged, and shipped to a Contract Laboratory Program (CLP) laboratory scheduled through the EPA CST on December 11, 2015. The groundwater samples were analyzed for Trace Volatile Organics Analysis (TVOA) under CLP Case No. 45855 using CLP Statement of Work (SOW) SOM02.3 at Chemtech Consulting Group, Mountainside, NJ. Regional copies of the Chain-of-Custody/Traffic Reports are included in Attachment 1.

Soil Gas Sampling Activities

The soil gas sampling was also conducted on December 10, 2015 in accordance with the EPA-approved SQAP (TechLaw, 2015b), except as noted below. Soil gas sampling locations are depicted in Figure 3. The first soil gas sample (sample No. SG03) was collected from soil gas well SG-3. Flow controllers (45-minute time period for sample collection) were installed on certified-clean summa canisters and a shut-in test was performed prior to collecting samples. After the summa canister/flow controller assembly passed the shut-in test, a leak test was performed on the sample tubing and fittings. The damaged portion of the above-ground tubing from the well was cut off prior to conducting the leak test. The leak tests were performed as follows: 1) a shroud/cover was placed over the soil gas well; 2) tubing from the soil gas well was connected to ¼-inch outside diameter (O.D.) PTFE-lined polyethylene sample tubing using Swagelock® fittings; 3) the sample tubing was extended through a small opening in the shroud to a Tedlar bag® contained in a vacuum box (connection fittings remained inside the shroud); 4) helium tracer gas was pumped into the shroud; 5) an MGD-2002 dielectric helium leak detector was used to confirm the concentration of helium in the shroud at greater than 10%; 6) an air pump was connected to the vacuum box and used to create a vacuum and draw one liter of soil gas from the soil gas well, through the tubing and fittings (inside the shroud) and into the Tedlar bag®; 7) the helium leak detector was used to test the soil gas collected in the Tedlar bag® to determine if there were any leaks in the tubing/fittings. The absence of helium in the collected soil gas along with the successful shut-in test results were indicative that there were no leaks in the sampling train. The sample tubing was then attached to the flow controller/summa canister with a Swagelock® fitting and the valve was opened on the summa canister to commence sample collection. Sample collection was ended after approximately 45 minutes by securing the summa canister valve after the vacuum pressure on the canister dropped to between -5 to -10 pounds per square inch (PSI) mercury (Hg).

While soil gas sample SG-03 was being collected, TechLaw set up to collect a soil gas sample from soil gas well SG-2. However, when conducting the leak test of SG-2, water was drawn into the Tedlar bag®, indicating that the sampling zone was saturated. Therefore, a soil gas sample could not be collected from SG-2.

TechLaw collected three soil gas samples using dedicated soil gas/vapor implant tips (soil gas implants) and Teflon®-lined tubing. These samples, designated SV01, SV02, and SV03, were collected from the unpaved, grass-covered area between the convenience store building and the strip mall located on the northern boundary of the Site (Figure 3). Site background reports indicated that a diesel fuel tank was formerly located in this area. These samples were collected using the following procedures: 1) ¼-inch O.D. PTFE-lined tubing was inserted through a hollow stainless steel soil coring tube and attached to a dedicated soil gas implant; 2) the tubing was pulled up through the coring tube until the soil gas implant seated in the end of the coring tube; 3) a slam bar slide hammer was used to drive the coring tube and soil gas implants into the ground to a depth of between 2.5 to 3 feet bgs; 4) after the desired sampling depth was achieved, the coring tube was pulled upwards for 0.25 to 0.5 feet, while holding the tubing to ensure the implant remained at depth and was deployed in the ground outside the coring tube; 5) the annulus of the borehole around the coring tube was sealed using modelling clay; 6) the sample tubing was connected to a certified-clean 6-liter summa canister equipped with a 45-minute flow controller using a Swagelok® fitting; 7) sample collection was initiated by opening the sampling

valve on the summa canister; 8) sampling was ended/completed by securing the summa valve when the summa vacuum pressure dropped to between -5 to -10 PSI Hg.

The summa canisters were stored out of direct sunlight until the soil gas samples were shipped to the laboratory. The soil gas samples were shipped to the EPA Region III OASQA Laboratory on December 11, 2015 to be analyzed for VOCs under DAS No. R34779 using EPA Method TO-15. Regional copies of the Chain-of-Custody/Traffic Reports are included in Attachment 2.

Investigation-derived Waste Disposal

Investigation-derived waste (IDW) generated during the sampling consisted of monitoring well purge water and equipment decontamination water which were collected in a 55-gallon drum for storage until disposal arrangements could be made. Analytical results for the IDW purge water indicated the IDW could be disposed of as non-hazardous, solid waste. TechLaw prepared a Request for Proposal (RFP) for transportation and disposal (T&D) of the IDW and solicited bids from multiple vendors. A subcontract for T&D of the IDW was awarded to Valicor Environmental Services, LLC, Huntington, West Virginia. On February 5, 2016, the IDW drum was picked up and transported to Valicor's Franklin, OH facility for disposal. Analytical data for the IDW sample is included in Attachment 3 (Data Validation Report). A copy of the non-hazardous waste Bill of Lading is provided in Attachment 6.

Analytical Results for Groundwater Samples

Analytical results for the groundwater samples indicated the presence of low concentrations of petroleum/gasoline-related constituents in two of the three wells sampled and detection of PCE at a trace level in one well. Results for MW-1 indicated the presence of MTBE at a concentration of 0.76 µg/L and also PCE at a concentration of 0.15 J µg/L, which is below the Contract Required Quantitation Limit (CRQL) of 0.5 µg/L. Monitoring well MW-2 had the following VOCs detected: MTBE – 2.5 µg/L; benzene – 26 µg/L; cyclohexane – 2.9 µg/L; methylcyclohexane – 1.2 µg/L; toluene – 8.1 µg/L; ethylbenzene – 0.5 µg/L; o-xylene – 1.8 µg/L; m,p-xylene – 2.4 µg/L; isopropylbenzene – 0.97 µg/L; and. All the compounds detected in MW-2 were common petroleum/gasoline constituents. The results for MW-13 were non-detect for all VOC analytes. The only exceedance of a Maximum Contaminant Level (MCL) for drinking water or a West Virginia (WV) De Minimis concentration for groundwater was for benzene detected in MW-2, which exceeded both the MCL and the WV De Minimus concentrations of 5 µg/L. Analytical results for all VOCs that were detected in at least one sample are presented in Table 1. Complete analytical results are presented in the data validation report provided in Attachment 3.

Analytical Results for Soil Gas Samples

Analytical results for soil gas well SG-3 indicated the presence of low concentrations of several gasoline-related constituents and PCE. The highest concentration detection was for PCE at 456 µg/m³. Trace-level gasoline constituents detected included: o-xylene at 1.4 µg/m³; m,p-xylene at 3.5 µg/m³; toluene at 4.9 µg/m³; and 1,2,4-trimethylbenzene at 1.6 µg/m³. Trace levels of refrigerant compounds dichlorodifluoromethane (2.3 µg/m³) and trichlorofluoromethane (1.4

$\mu\text{g}/\text{m}^3$) were also detected. Trace levels of common laboratory contaminants/solvents acetone ($3.3 \mu\text{g}/\text{m}^3$) and 2-butanone ($0.8 \mu\text{g}/\text{m}^3$) were also detected.

Analytical results for soil gas samples collected from the temporary implants indicated trace level detections of PCE in the two sample locations nearest the northern property boundary (SV-02 and SV-03). SV-02 and SV-03 had PCE detected at concentrations of $1.6 \mu\text{g}/\text{m}^3$ and $1.4 \mu\text{g}/\text{m}^3$, respectively. PCE was not detected in SV-01, which was located near the convenience store building. Trace levels of gasoline constituents, solvents, and refrigerant compounds were also detected in one or more of the samples. Acetone, a common laboratory contaminant, was the highest concentration contaminant detected in all three samples with concentrations of $6.6 \mu\text{g}/\text{m}^3$ in SV-01, $13.2 \mu\text{g}/\text{m}^3$ in SV-02, and $14.1 \mu\text{g}/\text{m}^3$ in SV-03. Refer to Table 2 for a summary of compounds detected in at least one sample. Analytical results for all VOCs that were detected in at least one sample are presented in Table 2. Complete analytical results are presented in the Final Analytical Report provided in Attachment 4.

Conclusions

The primary objectives of the investigation were to determine if groundwater had been impacted by non-petroleum related contaminants, such as PCE and its breakdown products, and to determine if a contaminant source area was present in subsurface soil. Analytical results for this sampling event confirmed the presence of a low level of PCE in soil gas well SG-3 at a concentration of $456 \mu\text{g}/\text{m}^3$. This was considerably lower than the highest PCE concentration reported in soil gas by contractors for the property owner ($3,700 \mu\text{g}/\text{m}^3$). PCE was only detected in one of the groundwater monitoring well samples. PCE was detected at a trace level in MW-01 at a concentration of $0.15 \mu\text{g}/\text{L}$, below CRQL of $0.5 \mu\text{g}/\text{L}$ and well below the $5 \mu\text{g}/\text{L}$ MCL and WV De Minimus concentration. PCE was not detected in any other groundwater sample for this event and also the December 2014 EPA sampling event (TechLaw, 2015a). PCE was also detected at trace levels in two soil gas samples collected from temporary implants located near the northern property boundary, SV02 and SV03 at $1.6 \mu\text{g}/\text{m}^3$ and $1.4 \mu\text{g}/\text{m}^3$, respectively.

A number of gasoline-related contaminants were detected in the groundwater sample collected from MW-2, which is located immediately south of the facility's UST field. However, the only contaminant detected at a concentration that exceeded an MCL or WV DeMinimus concentration was benzene, at a concentration of $26 \mu\text{g}/\text{L}$.

Based on the analytical results for groundwater samples collected during this sampling event and the previous EPA sampling event (TechLaw, 2015a), it appears that PCE has migrated into the groundwater but only at a trace level. The horizontal extent of the PCE contamination in groundwater also appears to be minimal, based on the analytical results for the other groundwater samples collected. Analytical results for soil gas samples collected as part of this investigation indicate the presence of low level PCE contamination in soil at or near SG-3. Only trace levels of PCE were detected in other soil gas sampling locations.

References

TEC, 2011. Total Environmental Concepts, Inc., *Human Health and Ecological Risk Assessment Report, Sunny's One Stop, Martinsburg, West Virginia*, Alexandria, VA. October 2012.

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TechLaw, 2014. TechLaw, Inc., *Sampling QA/QC Work Plan – Addendum 1, Removal Site Evaluation, Queen Street VOC Site, Wheeling, WV.* November 7, 2014.

TechLaw, 2015a. TechLaw, Inc., *Letter Report: Removal Assessment – Groundwater Sampling Activities November to December 2014, Queen Street VOC Site, Wheeling, WV.* May 26, 2015.

TechLaw, 2015b. TechLaw, Inc., *Sampling QA/QC Work Plan – Addendum 1, Removal Site Evaluation, Queen Street VOC Site, Wheeling, WV.* November 20, 2015.

If you have any questions or comments regarding this document, please contact me at (740) 867-0968 or (304) 830-1442 (mobile).

Sincerely,

[REDACTED]

[REDACTED].
START Site Leader

Enclosures:

Figure 1 – Site Location Map

Figure 2 – Site Map

Figure 3 – Sample Location Map

Table 1 – Analytical Summary of Detected VOCs in Groundwater

Table 2 - Analytical Summary of Detected VOCs in Soil Gas

Attachment 1 – Chain-of-Custody/Traffic Report – Groundwater Samples

Attachment 2 – Chain-of-Custody/Traffic Reports – Soil Gas Samples

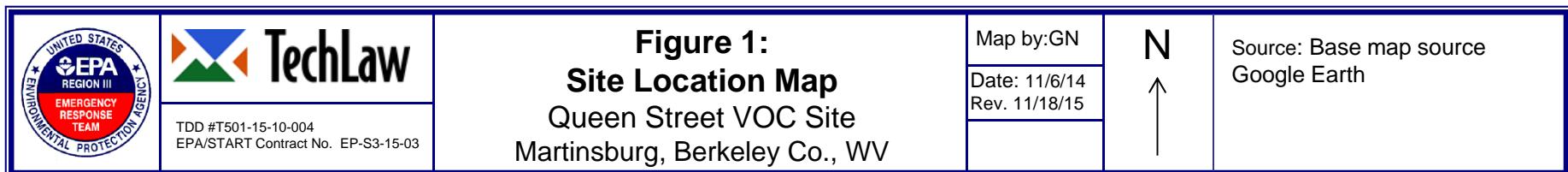
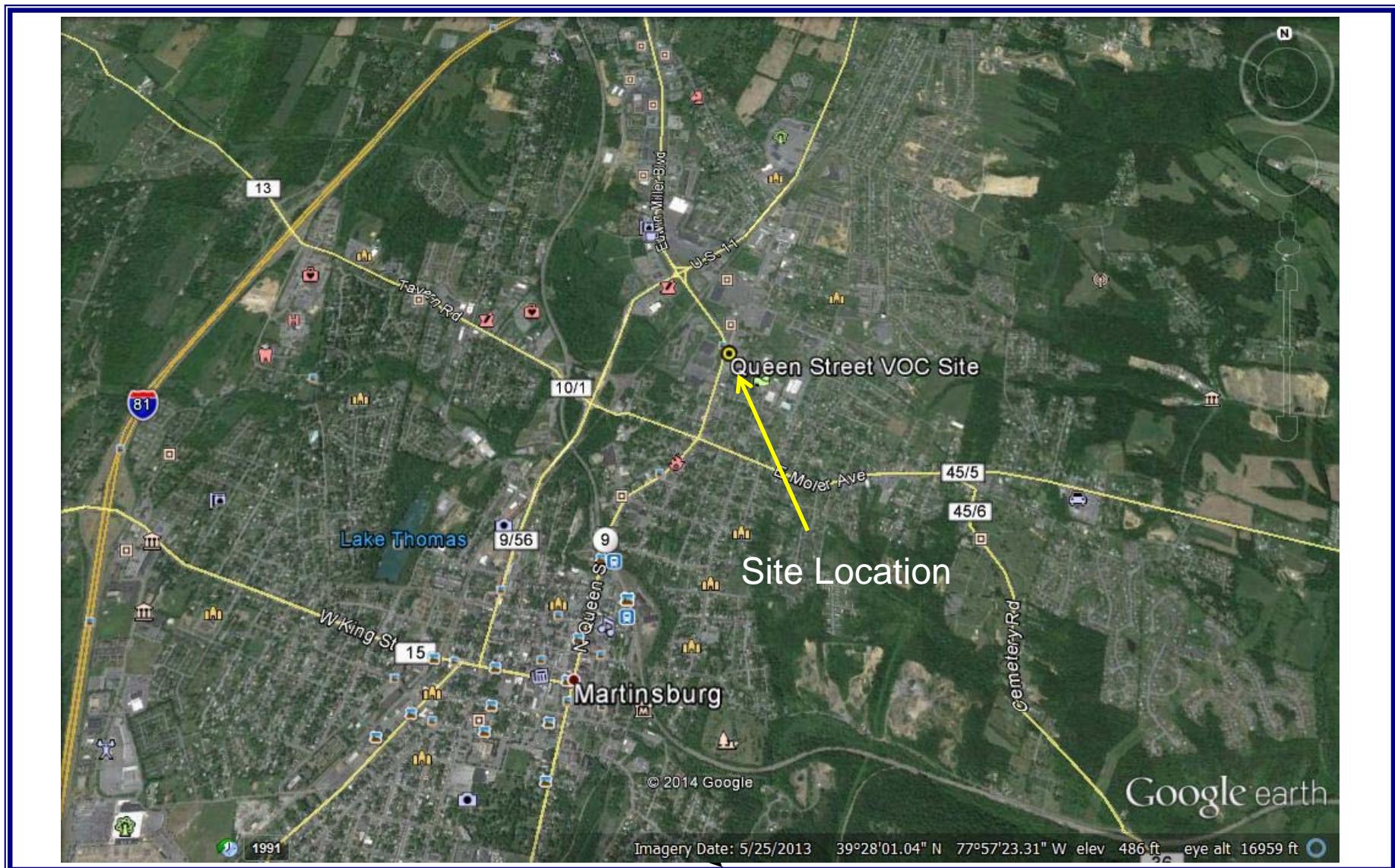
Attachment 3 – Data Validation Report for Groundwater – CLP Case No. 45855/SDG C0AA0

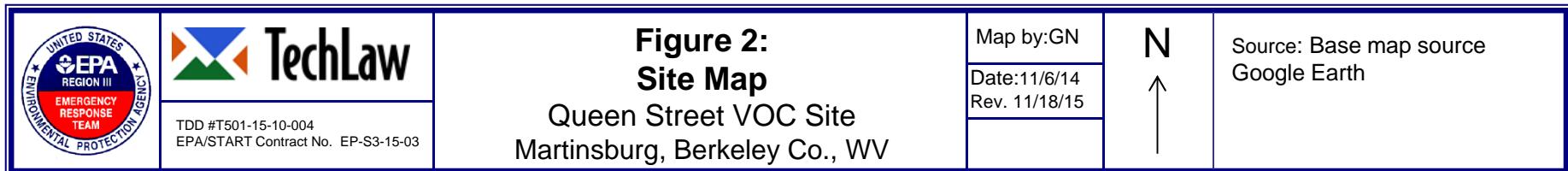
Attachment 4 – Final Analytical Report, Soil Gas – DAS No. R34779

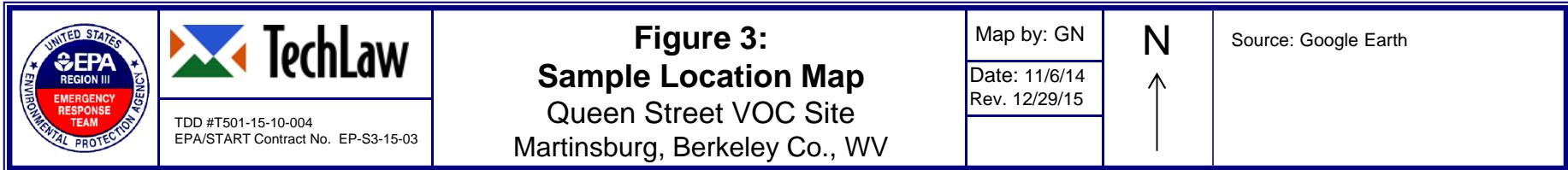
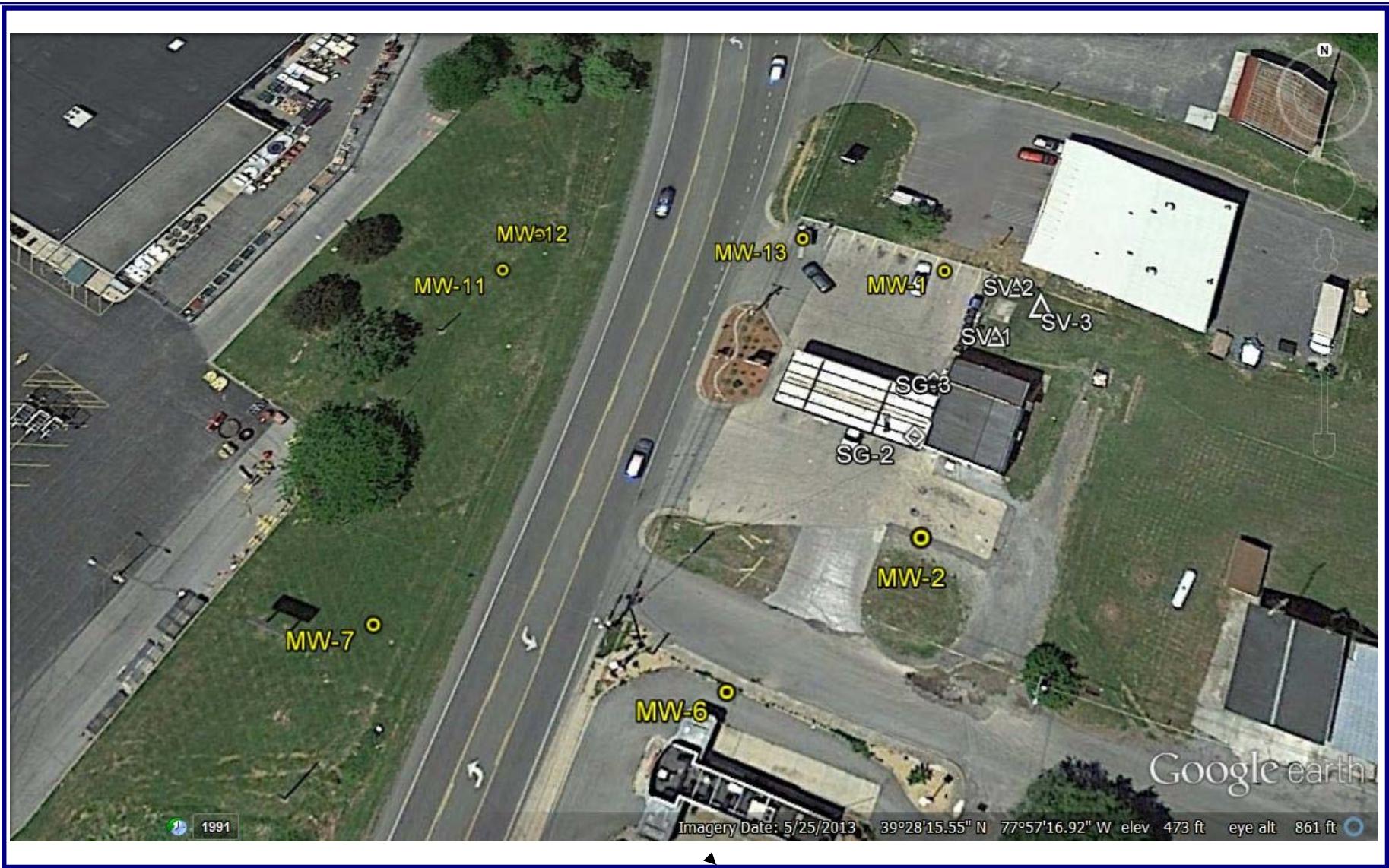
Attachment 5 - Photographic Documentation

Attachment 6 – Non-Hazardous Bill of Lading

FIGURES







TABLES

Table 1 - Analytical Summary of Detected VOCs in Groundwater
Queen Street VOC Site
December 10, 2015
Martinsburg, Berkeley County, West Virginia

CLP Sample #:		C0AA0	C0AA2		C0AA3			
Sample Location:		MW-1	MW-2		MW-13			
Matrix:		Groundwater	Groundwater		Groundwater			
Units:		(µg/L)	(µg/L)		(µg/L)			
Date collected:		12/10/2015	12/10/2015		12/10/2015			
Parameter	MCL	WV De Minimis	Result	Q	Result	Q	Result	Q
Methy tert-butyl ether	NA	12	0.76		2.5		0.5	U
Cyclohexane	NA	12,000	0.5	U	2.9		0.5	U
Benzene	5	5	0.5	U	26		0.5	U
Methylcyclohexane	NA	NA	0.5	U	1.2		0.5	U
Toluene	1,000	1,000	0.5	U	8.1		0.5	U
Tetrachloroethene	5	5	0.15	J	0.5	U	0.5	U
Ethylbenzene	700	700	0.5	U	0.5		0.5	U
o-Xylene	NA	10,000	0.5	U	1.8		0.5	U
m,p-Xylene	NA	10,000	0.5	U	2.4		0.5	U
Isopropylbenzene	NA	540	0.5	U	0.97		0.5	U

Key:

MCL = Maximum Contaminant Levels for drinking water as defined in National Primary Drinking Water Regulations.

WV De Minimis = West Virginia Voluntary Remediation Program De Minimis Standards (Table 60-3B, June 1, 2014).

µg/L = Micrograms per liter.

Q = Data validation qualifier.

QC = Quality Control.

Gray highlight indicates a concentration that is at or above the MCL or WV De Minimis standard.

Qualifiers:

J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.

Table 2 - Analytical Summary of Detected VOCs in Soil Gas
Queen Street VOC Site
December 10, 2015
Martinsburg, Berkeley County, West Virginia

Sample Location:	SG03	SV01		SV02		SV03	
Matrix:	Soil Gas	Soil Gas		Soil Gas		Soil Gas	
Units:	µg/m ³	µg/m ³		µg/m ³		µg/m ³	
Date collected:	12/10/2015		12/10/2015		12/10/2015		12/10/2015
Parameter	Result	Q	Result	Q	Result	Result	Q
Acetone	3.3		6.6		13.2	14.1	
Benzene	ND		ND		2.7	2.5	
1,3-Butadiene	ND		ND		2.4	ND	
2-Butanone	0.8	J	1.7		3.5	4.3	
Carbon Disulfide	ND		0.9	J	1.6	1.4	J
Cyclohexane	ND		ND		ND	2.9	
Dichlorodifluoromethane	2.3		2.2	J	2.3	2.3	
Ethanol	1.6		1.5		3.1	ND	
Ethylbenzene	ND		ND		1.2	J	ND
Heptane	ND		1.0	J	2.7	1.6	J
Hexane	ND		1.0	J	3.0	2.1	
Isopropyl alcohol	2.9		3.1		6.1	ND	
4-Methyl-2-pentanone	ND		ND		0.9	J	ND
Styrene	ND		ND		1.0	J	ND
Tetrachloroethylene	456	L	ND		1.6	J	1.4
Toluene	4.9		ND		5.1	3.0	
Trichlorofluoromethane	1.4	J	1.5	J	1.6	J	1.5
1,2,4-Trimethylbenzene	1.6	J	ND		1.6	J	ND
m,p-Xylene	3.5	J	ND		3.3	J	ND
o-Xylene	1.4	J	ND		1.4	J	ND

Key:

µg/m³ = Micrograms per cubic meter.

ND = non-detect

Q = Data validation qualifier.

Qualifiers:

J = The analyte was positively identified; the reported value is an estimate.

L = The analyte was positively identified; the reported value may be biased low. The actual value is expected to be greater than the reported value. Reported value is an estimate.

ATTACHMENT 1
CHAIN OF CUSTODY/TRAFFIC REPORT – GROUNDWATER SAMPLES

USEPA CLP Organics COC (REGION COPY)

DateShipped: 12/11/2015

CarrierName: FedEx

AirbillNo: 8083 7797 4281

CHAIN OF CUSTODY RECORD

Queen Street VOC/WV

Case #: 45855

Cooler #: 1

No: 3-120715-112211-0001

Lab: Chemtech Consulting Group

Lab Contact: [REDACTED]

Lab Phone: 9[REDACTED]

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
MW-01	C0AA0	Ground Water/[REDACTED]	Grab	CLP TVOA(21)	1000 (HCl), 1001 (HCl), 1002 (HCl) (3)	MW-01	12/10/2015 10:52	Field Duplicate of MW-21
MW-02	C0AA2	Ground Water/[REDACTED]	Grab	CLP TVOA(21)	1012 (HCl), 1013 (HCl), 1014 (HCl) (3)	MW-02	12/10/2015 12:30	Field Sample
MW-13	C0AA3	Ground Water/[REDACTED]	Grab	CLP TVOA(21)	1015 (HCl), 1016 (HCl), 1017 (HCl) (3)	MW-13	12/10/2015 09:23	Field Sample
TB01	C0AA5	Water/[REDACTED]	Grab	CLP TVOA(21)	1021 (HCl), 1022 (HCl), 1023 (HCl) (3)	TB01	12/09/2015 08:40	Trip Blank
FB01	C0AA6	Water/[REDACTED]	Grab	CLP TVOA(21)	1024 (HCl), 1025 (HCl), 1026 (HCl) (3)	FB01	12/10/2015 11:08	Field Blank
RB01	C0AA7	Water/[REDACTED]	Grab	CLP TVOA(21)	1027 (HCl), 1028 (HCl), 1029 (HCl) (3)	RB01	12/10/2015 11:18	Rinsate Blank
IDW01	C0AA8	Water/[REDACTED]	Grab	CLP TVOA(21)	1033 (HCl), 1034 (HCl), 1035 (HCl) (3)	IDW01	12/10/2015 13:09	Field Sample

Special Instructions:	Shipment for Case Complete? Y
	Samples Transferred From Chain of Custody #

Analysis Key: CLP TVOA=CLP TCL Trace Volatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

ATTACHMENT 2
CHAIN OF CUSTODY/TRAFFIC REPORT – SOIL GAS SAMPLES

USEPA CLP Generic COC (REGION COPY)

DateShipped: 12/11/2015

CarrierName: FedEx

AirbillNo: 8059 5309 3102

CHAIN OF CUSTODY RECORD

Queen Street VOC/WV

DAS #: R34779

Cooler #: 2

No: 3-120715-131157-0002

Lab: OASQA

Lab Contact:

Lab Phone:

Special Instructions:	Shipment for Case Complete? Y
	Samples Transferred From Chain of Custody #

Analysis Key: VOCs=VOCs by TO-15

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA CLP Generic COC (REGION COPY)

DateShipped: 12/11/2015

CarrierName: FedEx

AirbillNo: 8059 5309 3102

CHAIN OF CUSTODY RECORD

Queen Street VOC/WV

DAS #: R34779

Cooler #: 3

No: 3-120715-131416-0003

Lab: OASQA

Lab Contact:

Lab Phone:

Special Instructions: Analysis Key: VOCs=VOCs by TO-15	Shipment for Case Complete? Y	Samples Transferred From Chain of Custody #
---	--------------------------------------	--

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

ATTACHMENT 3
DATA VALIDATION REPORT FOR GROUNDWATER WITH DATA TABLE –
CASE # 45855/SDG C0AA0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE: February 4, 2016

SUBJECT: Region III Data QA Review

FROM: Brandon McDonald *[Signature]*
Region III ESAT PO (3EA22)

TO: Michael Towle
On-Scene Coordinator (3HS31)

Attached is the organic data validation report for the Queen Street VOC site for Case/DAS#45855; SDG#:C0AA0 completed by the Region III Environmental Services Assistance Team (ESAT), ICF International, contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2607.

Attachment

cc: (b) (4) (Tech Law)

TO: #0002 TDF: #0116012

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ICF International
ESAT Region 3
US Environmental Protection Agency Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Phone 410-305-3011

DATE: January 27, 2016

TO: Brandon McDonald
ESAT Region 3 Project Officer

FROM: (b) (4)
Data Review Chemist

(b) (4)
Oversight Chemist

SUBJECT: Organic Data Validation (S4VEM)
Site: Queen Street VOC
Case: 45855, SDG: C0AA0

OVERVIEW

Case 45855, Sample Delivery Group (SDG) C0AA0, consisted of one (1) trip blank, one (1) field blank, one (1) rinsate blank and four (4) ground water samples including one (1) field duplicate pair analyzed for trace volatile compounds. Samples were analyzed by ChemTech Consulting Group (CHM) according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM02.3 through the Routine Analysis Services (RAS) program.

SUMMARY

Validation of data was performed based on the Organic National Functional Guidelines utilizing the Environmental Data Exchange and Evaluation System (EXES) and are assigned the Superfund Data Validation Label S4VEM (Stage_4_Validation_Electronic_Manual). No areas of concern with respect to data usability were noted.

NOTES

Compounds detected below Contract Required Quantitation Limits (CRQLs) are qualified "J".

Method and storage blanks associated with this sample set were free of contamination. Acetone was detected in the trip, field and rinsate blanks. This compound was not detected in the field samples. No data were qualified based on this finding.

Benzene exceeded the calibration range in the initial analysis of trace volatile sample C0AA2. This sample was reanalyzed at a five-fold (5X) dilution to bring the concentration of this compound within the calibration range. The result for benzene in this sample was reported from the diluted analysis.

Sample C0AA0 is listed on the Chain of Custody (COC) record as the field duplicate pair to a sample with station location MW-21. No sample with station location MW-21 was part of this sampling group. Therefore, no comparison could be made by the reviewer.

Tentatively Identified Compounds (TICs) are not reviewed by data validators. The validation qualifiers are applied by EXES electronic validation based on laboratory qualifiers. By definition, all compounds identified as TICs should be treated as tentative identifications and should be considered estimated.

A sub-set of manual integrations noted in the laboratory case narrative were evaluated by the reviewer and found to be accurate and consistent. No action was taken by the reviewer based on manual integrations performed by the laboratory.

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

- U The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- NJ The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
- R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- C This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
- X This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

Sample Summary Report

Case No:	45855	Contract:	EPW14030	SDG No:	C0AA0	Lab Code:	CHM
Sample Number:	C0AA0	Method:	Trace Volatiles	Matrix:	Water	MA Number:	
Sample Location:	MW-01	pH:	1.0	Sample Date:	12/10/2015	Sample Time:	10:52:00
% Moisture :				% Solids :	0		

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.76		ug/L	0.76		1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.15	J	ug/L	0.15	J	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: C0AA2	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location: MW-02	pH: 1.3	Sample Date: 12/10/2015	Sample Time: 12:30:00
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	2.5		ug/L	2.5		1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	2.9		ug/L	2.9		1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	26		ug/L	26	D	5.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	1.2		ug/L	1.2		1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	8.1		ug/L	8.1		1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50		ug/L	0.50		1.0	Yes	S4VEM
o-Xylene	Target	1.8		ug/L	1.8		1.0	Yes	S4VEM
m,p-Xylene	Target	2.4		ug/L	2.4		1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.97		ug/L	0.97		1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene, 1,2,4,5-tetramethyl-	TIC	7.7	J	ug/L	7.7	J	1.0	Yes	NV
3-Pentanone, 2,2-dimethyl-	TIC	2.9	J	ug/L	2.9	J	1.0	Yes	NV
unknown-01	TIC	1.1	J	ug/L	1.1	J	1.0	Yes	NV
Benzene, 1,2,3-trimethyl-	TIC	1.0	J	ug/L	1.0	J	1.0	Yes	NV
Benzene, 2-ethenyl-1,4-dimethyl-	TIC	4.8	J	ug/L	4.8	J	1.0	Yes	NV
Total Alkanes	TIC	74		ug/L	74		1.0	Yes	NV
Benzene, 1-ethenyl-3-ethyl-	TIC	4.4	J	ug/L	4.4	J	1.0	Yes	NV
1H-Indene, 2,3-dihydro-1,6-dimethyl	TIC	2.5	J	ug/L	2.5	J	1.0	Yes	NV
unknown-02	TIC	1.1	J	ug/L	1.1	J	1.0	Yes	NV
1H-Indene, 2,3-dihydro-4,7-dimethyl	TIC	0.81	J	ug/L	0.81	J	1.0	Yes	NV
1H-Indene, 2,3-dihydro-2,2-dimethyl	TIC	0.86	J	ug/L	0.86	J	1.0	Yes	NV
Benzene, 1-ethyl-4-(1-methylethyl)	TIC	3.2	J	ug/L	3.2	J	1.0	Yes	NV
Benzene, 1-ethenyl-4-ethyl-	TIC	3.9	J	ug/L	3.9	J	1.0	Yes	NV
Endo-tricyclo[5.2.1.0(2.6)]decane	TIC	2.0	J	ug/L	2.0	J	1.0	Yes	NV

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Benzene, (2-methylpropyl)-	TIC	2.4	J	ug/L	2.4	J	1.0	Yes	NV
Benzene, 1,2-diethyl-	TIC	4.0	J	ug/L	4.0	J	1.0	Yes	NV
Benzene, 1-ethyl-2,3-dimethyl-	TIC	3.6	J	ug/L	3.6	J	1.0	Yes	NV
4,7-Methanoindene, 3a,4,5,6,7,7a-h	TIC	2.8	J	ug/L	2.8	J	1.0	Yes	NV
Benzene, propyl-	TIC	3.3	J	ug/L	3.3	J	1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: C0AA3	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location: MW-13	pH: 1.0	Sample Date: 12/10/2015	Sample Time: 09:23:00
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: C0AA5	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location: TB01	pH: 1.0	Sample Date: 12/09/2015	Sample Time: 08:40:00
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	18		ug/L	18		1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: C0AA6	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location: FB01	pH: 1.0	Sample Date: 12/10/2015	Sample Time: 11:08:00
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	23		ug/L	23		1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: C0AA7	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location: RB01	pH: 1.0	Sample Date: 12/10/2015	Sample Time: 11:18:00
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	30		ug/L	30		1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: C0AA8	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location: IDW01	pH: 1.0	Sample Date: 12/10/2015	Sample Time: 13:09:00
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	1.3		ug/L	1.3		1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	1.2		ug/L	1.2		1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	9.0		ug/L	9.0		1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.35	J	ug/L	0.35	J	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.20	J	ug/L	0.20	J	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	6.5		ug/L	6.5		1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.37	J	ug/L	0.37	J	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.15	J	ug/L	0.15	J	1.0	Yes	S4VEM
o-Xylene	Target	0.40	J	ug/L	0.40	J	1.0	Yes	S4VEM
m,p-Xylene	Target	0.80		ug/L	0.80		1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.19	J	ug/L	0.19	J	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.18	J	ug/L	0.18	J	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
unknown-01	TIC	2.5	J	ug/L	2.5	J	1.0	Yes	NV
Amylene Hydrate	TIC	0.93	J	ug/L	0.93	J	1.0	Yes	NV
Benzene, 1,2,3-trimethyl-	TIC	0.81	J	ug/L	0.81	J	1.0	Yes	NV
Benzene, (1-methylethyl)-	TIC	0.78	J	ug/L	0.78	J	1.0	Yes	NV
Imidazol-5(2H)-one, 4-amino-2-(2-f	TIC	0.76	J	ug/L	0.76	J	1.0	Yes	NV
Total Alkanes	TIC	28		ug/L	28		1.0	Yes	NV
Propanoic acid, butyl ester	TIC	8.6	J	ug/L	8.6	J	1.0	Yes	NV
Benzene, cyclopropyl-	TIC	1.3	J	ug/L	1.3	J	1.0	Yes	NV
Benzene, 1-ethyl-3-methyl-	TIC	1.5	J	ug/L	1.5	J	1.0	Yes	NV
4,7-Methanoindene, 3a,4,5,6,7,7a-h	TIC	0.56	J	ug/L	0.56	J	1.0	Yes	NV
3-Pentanone, 2,2-dimethyl-	TIC	2.9	J	ug/L	2.9	J	1.0	Yes	NV
Benzene, propyl-	TIC	0.59	J	ug/L	0.59	J	1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: VBLK33	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: VBLK34	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: VBLK60	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: VHBLK01	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location:	pH: 1.6	Sample Date:	Sample Time:
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Total Alkanes	TIC			ug/L			1.0	Yes	NV

Case No: 45855	Contract: EPW14030	SDG No: C0AA0	Lab Code: CHM
Sample Number: VIBLK57	Method: Trace Volatiles	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture :		% Solids : 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Vinyl chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromomethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichlorofluoromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Acetone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Carbon disulfide	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl Acetate	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylene chloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
trans-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methyl tert-butyl Ether	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,2-Dichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Butanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Bromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chloroform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,1-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Carbon tetrachloride	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Benzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Trichloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Methylcyclohexane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromodichloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
cis-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
4-Methyl-2-pentanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Toluene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
trans-1,3-Dichloropropene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2-Trichloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Tetrachloroethene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
2-Hexanone	Target	5.0	U	ug/L	5.0	U	1.0	Yes	S4VEM
Dibromochloromethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromoethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Chlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Ethylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
o-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
m,p-Xylene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Styrene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Bromoform	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Isopropylbenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,1,2,2-Tetrachloroethane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,3-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,4-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2-Dibromo-3-chloropropane	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,4-trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
1,2,3-Trichlorobenzene	Target	0.50	U	ug/L	0.50	U	1.0	Yes	S4VEM
Cyclohexene,3-(2-propenyl)-	TIC	1.1	J	ug/L	1.1	J	1.0	Yes	NV
Total Alkanes	TIC			ug/L			1.0	Yes	NV

ATTACHMENT 4
FINAL ANALYTICAL REPORT, SOIL GAS – DAS # R34779



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Final Analytical Report

Site Name.....	Queen Street VOC
Sample Collection Date(s).....	12/10/15 15:51- 12/10/15 18:02
Contact.....	Mike Towle
Report Date.....	01/15/16 13:36
Project #.....	DAS R34779
Work Order.....	1512016

Analyses included in this report:

VOCs by EPA TO-15, TO-15 list (ESAT)

Approved for Release



Karen Costa

OASQA Representative



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

Report Narrative

This report provides reporting units in ug/m³ and ppbv. Slight rounding errors will occur in the Electronic Data Deliverable (EDD).

Two compounds: cumene [isopropylbenzene] and formaldehyde were listed in the analytical request but are not present in the analytical standards that are currently utilized for this method. Therefore, these compounds would be reported as tentatively identified compounds (TICs), if detected. Laboratory analysis confirms that none of these compounds were detected in any of the samples at routine quantitation levels.

The percent recovery for tetrachloroethene is outside the control limit (<70%) in the Matrix Spike (MS) and Matrix Spike Duplicate analysis of sample 1512016-01. Therefore, the tetrachloroethene result in sample 1512016-01 is qualified as biased low (L).

The full name for the TIC at retention time 21.91 in sample 1512016-02 was cut off in Element due to the limited space in the field; therefore the full name for the TIC is Bicyclo[3.1.0]hex-2-ene, 4-methyl-1-(1-methylethyl)-.

1512016 FINAL DAS R34779

01/15/2016



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Matrix	Date Sampled	Date Received
SG03	1512016-01	Air	12/10/15 15:51	12/14/15 10:43
SV01	1512016-02	Air	12/10/15 16:53	12/14/15 10:43
SV02	1512016-03	Air	12/10/15 17:12	12/14/15 10:49
SV03	1512016-04	Air	12/10/15 18:02	12/14/15 10:49

USEPA CLP Generic COC (LAB COPY)

DateShipped: 12/11/2015

CarrierName: FedEx

AirbillNo: 8059 5309 3102

CHAIN OF CUSTODY RECORD

No: 3-120715-131157-0002

Lab: OASQA

Lab Contact: John Curry

Lab Phone: 410-305-3032

DAS #: R34779

Cooler #: 2

Special Instructions:	(b) (4)		Shipment for Case Complete? Y Samples Transferred From Chain of Custody #
Analysis Key: VOCs=VOCs by TO-15			

Analysis Key: VOCs=VOCs by TO-15

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
(b) (4)	/ Techlan	12-11-15 11:00	Rosa Diaz ESAT	10:43 12/14/15	228 12/18/15 no temp blank

USEPA CLP Generic COC (LAB COPY)

DateShipped: 12/11/2015

CarrierName: FedEx

Airbill No: 8059 5309 3102

CHAIN OF CUSTODY RECORD

No: 3-120715-131416-0003

Lab: OASQA

Lab Contact: John Curry

Lab Phone: 410-305-3032

Special Instructions:	(b) (4)	Shipment for Case Complete? Y Samples Transferred From Chain of Custody #
Analysis Key: VOCs=VOCs by TO-15		

Analysis Key: VOCs=VOCs by TO-15

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
(b) (4)	[REDACTED] / Techlan	12-11-15 / 1100	Rosa Flores EST	10:49 12/14/15	dark 12/17/15 no temp blank



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SG03**Lab ID:** 1512016-01**Sample Matrix:** Air**Date Collected:** 12/10/2015**Volatile Organic Compounds****Targets**

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Acetone	3.3	1.4	0.5		1	12/16/15 01:45	TO-15/R3QA230
Benzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Benzyl chloride	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Bromodichloromethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Bromoform	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Bromomethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,3-Butadiene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
2-Butanone	0.8	0.3	0.5	J	1	12/16/15 01:45	TO-15/R3QA230
Carbon disulfide	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Carbon Tetrachloride	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Chlorobenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Chloroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Chloroform	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Chloromethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Cyclohexane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Dibromochloromethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,2-Dibromoethane (EDB)	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,2-Dichlorobenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,3-Dichlorobenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,4-Dichlorobenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Dichlorodifluoromethane	2.3	0.5	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,1-Dichloroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,2-Dichloroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,1-Dichloroethene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
cis-1,2-Dichloroethene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
trans-1,2-Dichloroethene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,2-Dichloropropane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
cis-1,3-Dichloropropene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
trans-1,3-Dichloropropene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Dichlorotetrafluoroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,4-Dioxane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Ethanol	1.6	0.8	0.5		1	12/16/15 01:45	TO-15/R3QA230
Ethyl Acetate	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Ethylbenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
4-Ethyltoluene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Freon 113	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Heptane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SG03**Lab ID:** 1512016-01**Sample Matrix:** Air**Date Collected:** 12/10/2015**Volatile Organic Compounds****Targets (Continued)**

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Hexachlorobutadiene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Hexane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
2-Hexanone	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Isopropyl alcohol	2.9	1.2	0.5		1	12/16/15 01:45	TO-15/R3QA230
Methyl tert-Butyl Ether	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
4-Methyl-2-pentanone	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Methylene Chloride	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Propylene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Styrene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,1,2,2-Tetrachloroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Tetrachloroethene	456	66.6	4.0	L	8	12/16/15 02:39	TO-15/R3QA230
Tetrahydrofuran	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Toluene	4.9	1.3	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,2,4-Trichlorobenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,1,1-Trichloroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
1,1,2-Trichloroethane	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Trichloroethene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Trichlorofluoromethane	1.4	0.3	0.5	J	1	12/16/15 01:45	TO-15/R3QA230
1,2,4-Trimethylbenzene	1.6	0.3	0.5	J	1	12/16/15 01:45	TO-15/R3QA230
1,3,5-Trimethylbenzene	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Vinyl acetate	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
Vinyl chloride	U	U	0.5		1	12/16/15 01:45	TO-15/R3QA230
m,p-Xylene	3.5	0.8	1.0	J	1	12/16/15 01:45	TO-15/R3QA230
o-Xylene	1.4	0.3	0.5	J	1	12/16/15 01:45	TO-15/R3QA230

Surrogates

Analyte	Result ppbv	Flags Qualifiers	%Recovery %Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
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Surrogate: Bromofluorobenzene 9.69 97 % 80-120 12/15/15 12/16/15 01:45 TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SV01**Lab ID:** 1512016-02**Sample Matrix:** Air**Date Collected:** 12/10/2015

Volatile Organic Compounds
Targets

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Acetone	6.6	2.8	0.5		1	12/15/15 19:58	TO-15/R3QA230
Benzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Benzyl chloride	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Bromodichloromethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Bromoform	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Bromomethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,3-Butadiene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
2-Butanone	1.7	0.6	0.5		1	12/15/15 19:58	TO-15/R3QA230
Carbon disulfide	0.9	0.3	0.5	J	1	12/15/15 19:58	TO-15/R3QA230
Carbon Tetrachloride	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Chlorobenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Chloroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Chloroform	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Chloromethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Cyclohexane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Dibromochloromethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,2-Dibromoethane (EDB)	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,2-Dichlorobenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,3-Dichlorobenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,4-Dichlorobenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Dichlorodifluoromethane	2.2	0.4	0.5	J	1	12/15/15 19:58	TO-15/R3QA230
1,1-Dichloroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,2-Dichloroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,1-Dichloroethene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
cis-1,2-Dichloroethene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
trans-1,2-Dichloroethene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,2-Dichloropropane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
cis-1,3-Dichloropropene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
trans-1,3-Dichloropropene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Dichlorotetrafluoroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,4-Dioxane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Ethanol	1.5	0.8	0.5		1	12/15/15 19:58	TO-15/R3QA230
Ethyl Acetate	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Ethylbenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
4-Ethyltoluene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Freon 113	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SV01**Lab ID:** 1512016-02**Sample Matrix:** Air**Date Collected:** 12/10/2015**Volatile Organic Compounds
Targets (Continued)**

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Heptane	1.0	0.2	0.5	J	1	12/15/15 19:58	TO-15/R3QA230
Hexachlorobutadiene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Hexane	1.0	0.3	0.5	J	1	12/15/15 19:58	TO-15/R3QA230
2-Hexanone	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Isopropyl alcohol	3.1	1.2	0.5		1	12/15/15 19:58	TO-15/R3QA230
Methyl tert-Butyl Ether	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
4-Methyl-2-pentanone	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Methylene Chloride	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Propylene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Styrene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,1,2,2-Tetrachloroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Tetrachloroethene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Tetrahydrofuran	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Toluene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,2,4-Trichlorobenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,1,1-Trichloroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,1,2-Trichloroethane	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Trichloroethene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Trichlorofluoromethane	1.5	0.3	0.5	J	1	12/15/15 19:58	TO-15/R3QA230
1,2,4-Trimethylbenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
1,3,5-Trimethylbenzene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Vinyl acetate	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
Vinyl chloride	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230
m,p-Xylene	U	U	1.0		1	12/15/15 19:58	TO-15/R3QA230
o-Xylene	U	U	0.5		1	12/15/15 19:58	TO-15/R3QA230

Surrogates

Analyte	Result ppbv	Flags Qualifiers	%Recovery %Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
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Surrogate: Bromofluorobenzene 9.63 **96 %** 80-120 12/15/15 12/15/15 19:58 TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SV02**Lab ID:** 1512016-03**Sample Matrix:** Air**Date Collected:** 12/10/2015

Volatile Organic Compounds
Targets

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Acetone	13.2	5.5	0.5		1	12/15/15 23:49	TO-15/R3QA230
Benzene	2.7	0.8	0.5		1	12/15/15 23:49	TO-15/R3QA230
Benzyl chloride	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Bromodichloromethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Bromoform	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Bromomethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,3-Butadiene	2.4	1.1	0.5		1	12/15/15 23:49	TO-15/R3QA230
2-Butanone	3.5	1.2	0.5		1	12/15/15 23:49	TO-15/R3QA230
Carbon disulfide	1.6	0.5	0.5		1	12/15/15 23:49	TO-15/R3QA230
Carbon Tetrachloride	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Chlorobenzene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Chloroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Chloroform	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Chloromethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Cyclohexane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Dibromochloromethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,2-Dibromoethane (EDB)	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,2-Dichlorobenzene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,3-Dichlorobenzene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,4-Dichlorobenzene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Dichlorodifluoromethane	2.3	0.5	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,1-Dichloroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,2-Dichloroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,1-Dichloroethene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
cis-1,2-Dichloroethene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
trans-1,2-Dichloroethene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,2-Dichloropropane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
cis-1,3-Dichloropropene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
trans-1,3-Dichloropropene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Dichlorotetrafluoroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,4-Dioxane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Ethanol	3.1	1.6	0.5		1	12/15/15 23:49	TO-15/R3QA230
Ethyl Acetate	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Ethylbenzene	1.2	0.3	0.5	J	1	12/15/15 23:49	TO-15/R3QA230
4-Ethyltoluene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Freon 113	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SV02**Lab ID:** 1512016-03**Sample Matrix:** Air**Date Collected:** 12/10/2015**Volatile Organic Compounds
Targets (Continued)**

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Heptane	2.7	0.7	0.5		1	12/15/15 23:49	TO-15/R3QA230
Hexachlorobutadiene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Hexane	3.0	0.8	0.5		1	12/15/15 23:49	TO-15/R3QA230
2-Hexanone	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Isopropyl alcohol	6.1	2.5	0.5		1	12/15/15 23:49	TO-15/R3QA230
Methyl tert-Butyl Ether	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
4-Methyl-2-pentanone	0.9	0.2	0.5	J	1	12/15/15 23:49	TO-15/R3QA230
Methylene Chloride	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Propylene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Styrene	1.0	0.2	0.5	J	1	12/15/15 23:49	TO-15/R3QA230
1,1,2,2-Tetrachloroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Tetrachloroethene	1.6	0.2	0.5	J	1	12/15/15 23:49	TO-15/R3QA230
Tetrahydrofuran	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Toluene	5.1	1.3	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,2,4-Trichlorobenzene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,1,1-Trichloroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
1,1,2-Trichloroethane	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Trichloroethene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Trichlorofluoromethane	1.6	0.3	0.5	J	1	12/15/15 23:49	TO-15/R3QA230
1,2,4-Trimethylbenzene	1.6	0.3	0.5	J	1	12/15/15 23:49	TO-15/R3QA230
1,3,5-Trimethylbenzene	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Vinyl acetate	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
Vinyl chloride	U	U	0.5		1	12/15/15 23:49	TO-15/R3QA230
m,p-Xylene	3.3	0.8	1.0	J	1	12/15/15 23:49	TO-15/R3QA230
o-Xylene	1.4	0.3	0.5	J	1	12/15/15 23:49	TO-15/R3QA230

Surrogates

Analyte	Result ppbv	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
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Surrogate: Bromofluorobenzene 9.83 98 % 80-120 12/15/15 12/15/15 23:49 TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SV03**Lab ID:** 1512016-04**Sample Matrix:** Air**Date Collected:** 12/10/2015

Volatile Organic Compounds
Targets

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Acetone	14.1	5.9	0.5		1	12/15/15 21:53	TO-15/R3QA230
Benzene	2.5	0.8	0.5		1	12/15/15 21:53	TO-15/R3QA230
Benzyl chloride	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Bromodichloromethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Bromoform	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Bromomethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,3-Butadiene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
2-Butanone	4.3	1.4	0.5		1	12/15/15 21:53	TO-15/R3QA230
Carbon disulfide	1.4	0.4	0.5	J	1	12/15/15 21:53	TO-15/R3QA230
Carbon Tetrachloride	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Chlorobenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Chloroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Chloroform	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Chloromethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Cyclohexane	2.9	0.8	0.5		1	12/15/15 21:53	TO-15/R3QA230
Dibromochloromethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,2-Dibromoethane (EDB)	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,2-Dichlorobenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,3-Dichlorobenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,4-Dichlorobenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Dichlorodifluoromethane	2.3	0.5	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,1-Dichloroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,2-Dichloroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,1-Dichloroethene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
cis-1,2-Dichloroethene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
trans-1,2-Dichloroethene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,2-Dichloropropane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
cis-1,3-Dichloropropene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
trans-1,3-Dichloropropene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Dichlorotetrafluoroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,4-Dioxane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Ethanol	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Ethyl Acetate	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Ethylbenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
4-Ethyltoluene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Freon 113	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

**Site Name:** Queen Street VOC**Project #:** DAS R34779**Station ID:** SV03**Lab ID:** 1512016-04**Sample Matrix:** Air**Date Collected:** 12/10/2015**Volatile Organic Compounds
Targets (Continued)**

Analyte	Result µg/m3	Result ppbv	Quantitation Limit ppbv	Flags Qualifiers	Dilution	Analyzed	Method/SOP#
Heptane	1.6	0.4	0.5	J	1	12/15/15 21:53	TO-15/R3QA230
Hexachlorobutadiene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Hexane	2.1	0.6	0.5		1	12/15/15 21:53	TO-15/R3QA230
2-Hexanone	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Isopropyl alcohol	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Methyl tert-Butyl Ether	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
4-Methyl-2-pentanone	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Methylene Chloride	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Propylene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Styrene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,1,2,2-Tetrachloroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Tetrachloroethene	1.4	0.2	0.5	J	1	12/15/15 21:53	TO-15/R3QA230
Tetrahydrofuran	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Toluene	3.0	0.8	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,2,4-Trichlorobenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,1,1-Trichloroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,1,2-Trichloroethane	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Trichloroethene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Trichlorofluoromethane	1.5	0.3	0.5	J	1	12/15/15 21:53	TO-15/R3QA230
1,2,4-Trimethylbenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
1,3,5-Trimethylbenzene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Vinyl acetate	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
Vinyl chloride	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230
m,p-Xylene	U	U	1.0		1	12/15/15 21:53	TO-15/R3QA230
o-Xylene	U	U	0.5		1	12/15/15 21:53	TO-15/R3QA230

Surrogates

Analyte	Result ppbv	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
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Surrogate: Bromofluorobenzene 9.93 99 % 80-120 12/15/15 12/15/15 21:53 TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

Tentatively Identified Compound (TIC) Report Volatile Organic Compounds

CAS Number	Compound	Result ppbv	Analyte Qualifiers	Retention Time	Analyzed	Method/SOP#
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Lab ID: 1512016-01

Station ID: SG03

Sample Matrix: Air

Collected: 12/10/2015

75-45-6 Difluorochloromethane 1.2 T 4.59 12/16/15 01:45 TO-15/R3QA230

Volatile Organic Compounds

CAS Number	Compound	Result ppbv	Analyte Qualifiers	Retention Time	Analyzed	Method/SOP#
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Lab ID: 1512016-02

Station ID: SV01

Sample Matrix: Air

Collected: 12/10/2015

74-98-6 Propane 3.6 T 4.63 12/15/15 19:58 TO-15/R3QA230
28634-89-1 Bicyclo[3.1.0]hex-2-ene, 4-methyl-1-(1-methylethyl) 1.7 T 21.91 12/15/15 19:58 TO-15/R3QA230

Volatile Organic Compounds

CAS Number	Compound	Result ppbv	Analyte Qualifiers	Retention Time	Analyzed	Method/SOP#
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Lab ID: 1512016-03

Station ID: SV02

Sample Matrix: Air

Collected: 12/10/2015

NA	unknown (01)	6.8	T	4.62	12/15/15 23:49	TO-15/R3QA230
115-11-7	1-Propene, 2-methyl-	4.4	T	5.61	12/15/15 23:49	TO-15/R3QA230
106-97-8	Butane	1.6	T	5.70	12/15/15 23:49	TO-15/R3QA230
78-78-4	Butane, 2-methyl-	1.2	T	7.29	12/15/15 23:49	TO-15/R3QA230
1191-96-4	Cyclopropane, ethyl-	1.0	T	7.80	12/15/15 23:49	TO-15/R3QA230
109-66-0	Pentane	2.0	T	8.01	12/15/15 23:49	TO-15/R3QA230
592-41-6	1-Hexene	1.6	T	11.06	12/15/15 23:49	TO-15/R3QA230
124-13-0	Octanal	1.5	T	22.22	12/15/15 23:49	TO-15/R3QA230
124-19-6	Nonanal	3.2	T	23.76	12/15/15 23:49	TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

Tentatively Identified Compound (TIC) Report
Volatile Organic Compounds

CAS Number	Compound	Result ppbv	Analyte Qualifiers	Retention Time	Analyzed	Method/SOP#
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Lab ID: 1512016-04**Station ID:** SV03**Sample Matrix:** Air**Collected:** 12/10/2015

74-98-6	Propane	11.2	T	4.60	12/15/15 21:53	TO-15/R3QA230
NA	unknown (01)	1.0	T	4.92	12/15/15 21:53	TO-15/R3QA230
75-28-5	Isobutane	3.2	T	5.19	12/15/15 21:53	TO-15/R3QA230
115-11-7	1-Propene, 2-methyl-	1.9	T	5.59	12/15/15 21:53	TO-15/R3QA230
106-97-8	Butane	2.7	T	5.69	12/15/15 21:53	TO-15/R3QA230
78-78-4	Butane, 2-methyl-	2.1	T	7.27	12/15/15 21:53	TO-15/R3QA230
109-66-0	Pentane	1.4	T	7.99	12/15/15 21:53	TO-15/R3QA230



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT**Blank (BL51701-BLK1)**

Prepared: 12/15/15 04:12 Analyzed: 12/15/15 17:01

Acetone	U	0.5	ppbv							
Benzene	U	0.5	"							
Benzyl chloride	U	0.5	"							
Bromodichloromethane	U	0.5	"							
Bromoform	U	0.5	"							
Bromomethane	U	0.5	"							
1,3-Butadiene	U	0.5	"							
2-Butanone	U	0.5	"							
Carbon disulfide	U	0.5	"							
Carbon Tetrachloride	U	0.5	"							
Chlorobenzene	U	0.5	"							
Chloroethane	U	0.5	"							
Chloroform	U	0.5	"							
Chloromethane	U	0.5	"							
Cyclohexane	U	0.5	"							
Dibromochloromethane	U	0.5	"							
1,2-Dibromoethane (EDB)	U	0.5	"							
1,2-Dichlorobenzene	U	0.5	"							
1,3-Dichlorobenzene	U	0.5	"							
1,4-Dichlorobenzene	U	0.5	"							
Dichlorodifluoromethane	U	0.5	"							
1,1-Dichloroethane	U	0.5	"							
1,2-Dichloroethane	U	0.5	"							
1,1-Dichloroethene	U	0.5	"							
cis-1,2-Dichloroethene	U	0.5	"							
trans-1,2-Dichloroethene	U	0.5	"							
1,2-Dichloropropane	U	0.5	"							
cis-1,3-Dichloropropene	U	0.5	"							
trans-1,3-Dichloropropene	U	0.5	"							
Dichlorotetrafluoroethane	U	0.5	"							
1,4-Dioxane	U	0.5	"							
Ethanol	U	0.5	"							
Ethyl Acetate	U	0.5	"							
Ethylbenzene	U	0.5	"							
4-Ethyltoluene	U	0.5	"							
Freon 113	U	0.5	"							
Heptane	U	0.5	"							
Hexachlorobutadiene	U	0.5	"							



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT**Blank (BL51701-BLK1)**

					Prepared: 12/15/15 04:12	Analyzed: 12/15/15 17:01
Hexane	U	0.5	ppbv			
2-Hexanone	U	0.5	"			
Isopropyl alcohol	U	0.5	"			
Methyl tert-Butyl Ether	U	0.5	"			
4-Methyl-2-pentanone	U	0.5	"			
Methylene Chloride	U	0.5	"			
Propylene	U	0.5	"			
Styrene	U	0.5	"			
1,1,2,2-Tetrachloroethane	U	0.5	"			
Tetrachloroethene	U	0.5	"			
Tetrahydrofuran	U	0.5	"			
Toluene	U	0.5	"			
1,2,4-Trichlorobenzene	U	0.5	"			
1,1,1-Trichloroethane	U	0.5	"			
1,1,2-Trichloroethane	U	0.5	"			
Trichloroethene	U	0.5	"			
Trichlorofluoromethane	U	0.5	"			
1,2,4-Trimethylbenzene	U	0.5	"			
1,3,5-Trimethylbenzene	U	0.5	"			
Vinyl acetate	U	0.5	"			
Vinyl chloride	U	0.5	"			
m,p-Xylene	U	1.0	"			
o-Xylene	U	0.5	"			
<i>Surrogate: Bromofluorobenzene</i>	9.69		"	10.000	97	80-120

LCS (BL51701-BS1)

					Prepared: 12/15/15 04:12	Analyzed: 12/15/15 18:00
Acetone	4.96300	0.5	ppbv	5.0000	99	70-130
Benzene	5.27600	0.5	"	5.0000	106	70-130
Benzyl chloride	5.29000	0.5	"	5.0000	106	70-130
Bromodichloromethane	5.16400	0.5	"	5.0000	103	70-130
Bromoform	5.08400	0.5	"	5.0000	102	70-130
Bromomethane	5.17300	0.5	"	5.0000	103	70-130
1,3-Butadiene	4.61800	0.5	"	5.0000	92	70-130
2-Butanone	5.04600	0.5	"	5.0000	101	70-130
Carbon disulfide	5.18200	0.5	"	5.0000	104	70-130
Carbon Tetrachloride	5.04200	0.5	"	5.0000	101	70-130
Chlorobenzene	5.15000	0.5	"	5.0000	103	70-130
Chloroethane	5.18900	0.5	"	5.0000	104	70-130
Chloroform	5.08000	0.5	"	5.0000	102	70-130
Chloromethane	5.32400	0.5	"	5.0000	106	70-130
Cyclohexane	5.37100	0.5	"	5.0000	107	70-130



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
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701 Mapes Road
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Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT

LCS (BL51701-BS1)					Prepared: 12/15/15 04:12	Analyzed: 12/15/15 18:00				
Dibromochloromethane	5.02500	0.5	ppbv	5.0000		100	70-130			
1,2-Dibromoethane (EDB)	5.06400	0.5	"	5.0000		101	70-130			
1,2-Dichlorobenzene	4.81500	0.5	"	5.0000		96	70-130			
1,3-Dichlorobenzene	4.98700	0.5	"	5.0000		100	70-130			
1,4-Dichlorobenzene	5.05500	0.5	"	5.0000		101	70-130			
Dichlorodifluoromethane	5.07800	0.5	"	5.0000		102	70-130			
1,1-Dichloroethane	5.26000	0.5	"	5.0000		105	70-130			
1,2-Dichloroethane	4.84900	0.5	"	5.0000		97	70-130			
1,1-Dichloroethene	4.95600	0.5	"	5.0000		99	70-130			
cis-1,2-Dichloroethene	5.11900	0.5	"	5.0000		102	70-130			
trans-1,2-Dichloroethene	5.15400	0.5	"	5.0000		103	70-130			
1,2-Dichloropropane	5.38800	0.5	"	5.0000		108	70-130			
cis-1,3-Dichloropropene	5.08600	0.5	"	5.0000		102	70-130			
trans-1,3-Dichloropropene	5.10500	0.5	"	5.0000		102	70-130			
Dichlorotetrafluoroethane	5.11000	0.5	"	5.0000		102	70-130			
1,4-Dioxane	4.88600	0.5	"	5.0000		98	70-130			
Ethanol	4.76100	0.5	"	5.0000		95	70-130			
Ethyl Acetate	5.09100	0.5	"	5.0000		102	70-130			
Ethylbenzene	5.27800	0.5	"	5.0000		106	70-130			
4-Ethyltoluene	5.03700	0.5	"	5.0000		101	70-130			
Freon 113	4.88600	0.5	"	5.0000		98	70-130			
Heptane	5.59700	0.5	"	5.0000		112	70-130			
Hexachlorobutadiene	4.58700	0.5	"	5.0000		92	70-130			
Hexane	5.26500	0.5	"	5.0000		105	70-130			
2-Hexanone	5.24400	0.5	"	5.0000		105	70-130			
Isopropyl alcohol	4.74300	0.5	"	5.0000		95	70-130			
Methyl tert-Butyl Ether	4.84700	0.5	"	5.0000		97	70-130			
4-Methyl-2-pentanone	5.32800	0.5	"	5.0000		107	70-130			
Methylene Chloride	5.10800	0.5	"	5.0000		102	70-130			
Propylene	5.44700	0.5	"	5.0000		109	70-130			
Styrene	5.21100	0.5	"	5.0000		104	70-130			
1,1,2,2-Tetrachloroethane	5.18100	0.5	"	5.0000		104	70-130			
Tetrachloroethene	5.03900	0.5	"	5.0000		101	70-130			
Tetrahydrofuran	5.06000	0.5	"	5.0000		101	70-130			
Toluene	5.31600	0.5	"	5.0000		106	70-130			
1,2,4-Trichlorobenzene	4.50900	0.5	"	5.0000		90	70-130			
1,1,1-Trichloroethane	4.97500	0.5	"	5.0000		100	70-130			
1,1,2-Trichloroethane	5.12700	0.5	"	5.0000		103	70-130			
Trichloroethene	5.03400	0.5	"	5.0000		101	70-130			
Trichlorofluoromethane	4.86600	0.5	"	5.0000		97	70-130			
1,2,4-Trimethylbenzene	4.86300	0.5	"	5.0000		97	70-130			



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT

LCS (BL51701-BS1)		Prepared: 12/15/15 04:12			Analyzed: 12/15/15 18:00		
1,3,5-Trimethylbenzene	4.88000	0.5	ppbv	5.0000		98	70-130
Vinyl acetate	5.32300	0.5	"	5.0000		106	70-130
Vinyl chloride	4.83200	0.5	"	5.0000		97	70-130
m,p-Xylene	10.5540	1.0	"	10.000		106	70-130
o-Xylene	5.15500	0.5	"	5.0000		103	70-130
<i>Surrogate: Bromofluorobenzene</i>	9.98		"	10.000		100	80-120

Matrix Spike (BL51701-MS1)		Source: 1512016-01RE1			Prepared: 12/15/15 04:12			Analyzed: 12/16/15 03:37		
Acetone	4.68300	0.5	ppbv	5.0000	0.207000	90	70-130			
Benzene	5.15000	0.5	"	5.0000	U	103	70-130			
Benzyl chloride	4.93000	0.5	"	5.0000	U	99	70-130			
Bromodichloromethane	4.97600	0.5	"	5.0000	U	100	70-130			
Bromoform	4.66900	0.5	"	5.0000	U	93	70-130			
Bromomethane	5.07600	0.5	"	5.0000	U	102	70-130			
1,3-Butadiene	4.48400	0.5	"	5.0000	U	90	70-130			
2-Butanone	4.72000	0.5	"	5.0000	U	94	70-130			
Carbon disulfide	5.13800	0.5	"	5.0000	U	103	70-130			
Carbon Tetrachloride	4.88700	0.5	"	5.0000	U	98	70-130			
Chlorobenzene	4.88000	0.5	"	5.0000	U	98	70-130			
Chloroethane	5.12800	0.5	"	5.0000	U	103	70-130			
Chloroform	5.02000	0.5	"	5.0000	U	100	70-130			
Chloromethane	4.88300	0.5	"	5.0000	U	98	70-130			
Cyclohexane	5.21000	0.5	"	5.0000	U	104	70-130			
Dibromochloromethane	4.72400	0.5	"	5.0000	U	94	70-130			
1,2-Dibromoethane (EDB)	4.98200	0.5	"	5.0000	U	100	70-130			
1,2-Dichlorobenzene	4.40000	0.5	"	5.0000	U	88	70-130			
1,3-Dichlorobenzene	4.50600	0.5	"	5.0000	U	90	70-130			
1,4-Dichlorobenzene	4.60400	0.5	"	5.0000	U	92	70-130			
Dichlorodifluoromethane	5.07200	0.5	"	5.0000	U	101	70-130			
1,1-Dichloroethane	5.18700	0.5	"	5.0000	U	104	70-130			
1,2-Dichloroethane	4.73700	0.5	"	5.0000	U	95	70-130			
1,1-Dichloroethene	4.92500	0.5	"	5.0000	U	98	70-130			
cis-1,2-Dichloroethene	4.98500	0.5	"	5.0000	U	100	70-130			
trans-1,2-Dichloroethene	5.12900	0.5	"	5.0000	U	103	70-130			
1,2-Dichloropropane	5.19200	0.5	"	5.0000	U	104	70-130			
cis-1,3-Dichloropropene	4.90600	0.5	"	5.0000	U	98	70-130			
trans-1,3-Dichloropropene	4.90600	0.5	"	5.0000	U	98	70-130			
Dichlorotetrafluoroethane	4.74800	0.5	"	5.0000	U	95	70-130			
1,4-Dioxane	5.26400	0.5	"	5.0000	U	105	70-130			
Ethanol	4.73000	0.5	"	5.0000	U	95	70-130			
Ethyl Acetate	4.69100	0.5	"	5.0000	U	94	70-130			



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT

Matrix Spike (BL51701-MS1)	Source: 1512016-01RE1		Prepared: 12/15/15 04:12		Analyzed: 12/16/15 03:37					
Ethylbenzene	4.94400	0.5	ppbv	5.0000	U	99	70-130			
4-Ethyltoluene	4.60700	0.5	"	5.0000	U	92	70-130			
Freon 113	4.71900	0.5	"	5.0000	U	94	70-130			
Heptane	5.31400	0.5	"	5.0000	U	106	70-130			
Hexachlorobutadiene	4.56600	0.5	"	5.0000	U	91	70-130			
Hexane	5.13100	0.5	"	5.0000	U	103	70-130			
2-Hexanone	5.63600	0.5	"	5.0000	U	113	70-130			
Isopropyl alcohol	4.89600	0.5	"	5.0000	U	98	70-130			
Methyl tert-Butyl Ether	4.49000	0.5	"	5.0000	U	90	70-130			
4-Methyl-2-pentanone	5.65200	0.5	"	5.0000	U	113	70-130			
Methylene Chloride	5.08900	0.5	"	5.0000	U	102	70-130			
Propylene	5.36300	0.5	"	5.0000	U	107	70-130			
Styrene	4.77800	0.5	"	5.0000	U	96	70-130			
1,1,2,2-Tetrachloroethane	4.73500	0.5	"	5.0000	U	95	70-130			
Tetrachloroethene	11.6470	0.5	"	5.0000	8.33100	66	70-130			A
Tetrahydrofuran	4.68200	0.5	"	5.0000	U	94	70-130			
Toluene	5.17900	0.5	"	5.0000	U	104	70-130			
1,2,4-Trichlorobenzene	4.48400	0.5	"	5.0000	U	90	70-130			
1,1,1-Trichloroethane	4.82900	0.5	"	5.0000	U	97	70-130			
1,1,2-Trichloroethane	4.82800	0.5	"	5.0000	U	97	70-130			
Trichloroethene	4.92300	0.5	"	5.0000	U	98	70-130			
Trichlorofluoromethane	4.69300	0.5	"	5.0000	U	94	70-130			
1,2,4-Trimethylbenzene	4.48400	0.5	"	5.0000	U	90	70-130			
1,3,5-Trimethylbenzene	4.46500	0.5	"	5.0000	U	89	70-130			
Vinyl acetate	5.01300	0.5	"	5.0000	U	100	70-130			
Vinyl chloride	4.67400	0.5	"	5.0000	U	93	70-130			
m,p-Xylene	9.87000	1.0	"	10.000	U	99	70-130			
o-Xylene	4.73300	0.5	"	5.0000	U	95	70-130			
Surrogate: Bromofluorobenzene	9.88		"	10.000		99	80-120			



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT

Matrix Spike Dup (BL51701-MSD1)	Source: 1512016-01RE1		Prepared: 12/15/15 04:12		Analyzed: 12/16/15 04:35				
Acetone	4.77800	0.5	ppbv	5.0000	0.207000	91	70-130	2	25
Benzene	5.18500	0.5	"	5.0000	U	104	70-130	0.7	25
Benzyl chloride	5.08800	0.5	"	5.0000	U	102	70-130	3	25
Bromodichloromethane	5.03500	0.5	"	5.0000	U	101	70-130	1	25
Bromoform	4.87200	0.5	"	5.0000	U	97	70-130	4	25
Bromomethane	5.15200	0.5	"	5.0000	U	103	70-130	1	25
1,3-Butadiene	4.40500	0.5	"	5.0000	U	88	70-130	2	25
2-Butanone	4.88000	0.5	"	5.0000	U	98	70-130	3	25
Carbon disulfide	5.19000	0.5	"	5.0000	U	104	70-130	1	25
Carbon Tetrachloride	4.97400	0.5	"	5.0000	U	99	70-130	2	25
Chlorobenzene	5.01200	0.5	"	5.0000	U	100	70-130	3	25
Chloroethane	5.19400	0.5	"	5.0000	U	104	70-130	1	25
Chloroform	5.03900	0.5	"	5.0000	U	101	70-130	0.4	25
Chloromethane	5.12700	0.5	"	5.0000	U	103	70-130	5	25
Cyclohexane	5.24700	0.5	"	5.0000	U	105	70-130	0.7	25
Dibromochloromethane	4.88400	0.5	"	5.0000	U	98	70-130	3	25
1,2-Dibromoethane (EDB)	5.08100	0.5	"	5.0000	U	102	70-130	2	25
1,2-Dichlorobenzene	4.56100	0.5	"	5.0000	U	91	70-130	4	25
1,3-Dichlorobenzene	4.70400	0.5	"	5.0000	U	94	70-130	4	25
1,4-Dichlorobenzene	4.82300	0.5	"	5.0000	U	96	70-130	5	25
Dichlorodifluoromethane	5.19200	0.5	"	5.0000	U	104	70-130	2	25
1,1-Dichloroethane	5.18200	0.5	"	5.0000	U	104	70-130	0.1	25
1,2-Dichloroethane	4.75200	0.5	"	5.0000	U	95	70-130	0.3	25
1,1-Dichloroethene	4.96700	0.5	"	5.0000	U	99	70-130	0.8	25
cis-1,2-Dichloroethene	5.03600	0.5	"	5.0000	U	101	70-130	1	25
trans-1,2-Dichloroethene	5.12800	0.5	"	5.0000	U	103	70-130	0.02	25
1,2-Dichloropropane	5.23500	0.5	"	5.0000	U	105	70-130	0.8	25
cis-1,3-Dichloropropene	4.98900	0.5	"	5.0000	U	100	70-130	2	25
trans-1,3-Dichloropropene	5.01100	0.5	"	5.0000	U	100	70-130	2	25
Dichlorotetrafluoroethane	4.95800	0.5	"	5.0000	U	99	70-130	4	25
1,4-Dioxane	5.34100	0.5	"	5.0000	U	107	70-130	1	25
Ethanol	4.79500	0.5	"	5.0000	U	96	70-130	1	25
Ethyl Acetate	4.81400	0.5	"	5.0000	U	96	70-130	3	25
Ethylbenzene	5.08900	0.5	"	5.0000	U	102	70-130	3	25
4-Ethyltoluene	4.76600	0.5	"	5.0000	U	95	70-130	3	25
Freon 113	4.86200	0.5	"	5.0000	U	97	70-130	3	25
Heptane	5.40000	0.5	"	5.0000	U	108	70-130	2	25
Hexachlorobutadiene	4.61500	0.5	"	5.0000	U	92	70-130	1	25
Hexane	5.17200	0.5	"	5.0000	U	103	70-130	0.8	25
2-Hexanone	5.55300	0.5	"	5.0000	U	111	70-130	1	25
Isopropyl alcohol	4.90300	0.5	"	5.0000	U	98	70-130	0.1	25



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350



Site Name: Queen Street VOC

Project #: DAS R34779

QC Data
Volatile Organic Compounds

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch BL51701 - TO-15 prep ESAT

Matrix Spike Dup (BL51701-MSD1)	Source: 1512016-01RE1		Prepared: 12/15/15 04:12			Analyzed: 12/16/15 04:35			
Methyl tert-Butyl Ether	4.69100	0.5	ppbv	5.0000	U	94	70-130	4	25
4-Methyl-2-pentanone	5.59100	0.5	"	5.0000	U	112	70-130	1	25
Methylene Chloride	5.15100	0.5	"	5.0000	U	103	70-130	1	25
Propylene	5.40400	0.5	"	5.0000	U	108	70-130	0.8	25
Styrene	4.93400	0.5	"	5.0000	U	99	70-130	3	25
1,1,2,2-Tetrachloroethane	4.88400	0.5	"	5.0000	U	98	70-130	3	25
Tetrachloroethene	11.6080	0.5	"	5.0000	8.33100	66	70-130	1	25
Tetrahydrofuran	4.84700	0.5	"	5.0000	U	97	70-130	3	25
Toluene	5.28800	0.5	"	5.0000	U	106	70-130	2	25
1,2,4-Trichlorobenzene	4.59300	0.5	"	5.0000	U	92	70-130	2	25
1,1,1-Trichloroethane	4.91700	0.5	"	5.0000	U	98	70-130	2	25
1,1,2-Trichloroethane	4.94700	0.5	"	5.0000	U	99	70-130	2	25
Trichloroethene	4.98000	0.5	"	5.0000	U	100	70-130	1	25
Trichlorofluoromethane	4.80900	0.5	"	5.0000	U	96	70-130	2	25
1,2,4-Trimethylbenzene	4.62800	0.5	"	5.0000	U	93	70-130	3	25
1,3,5-Trimethylbenzene	4.62300	0.5	"	5.0000	U	92	70-130	3	25
Vinyl acetate	5.14200	0.5	"	5.0000	U	103	70-130	3	25
Vinyl chloride	4.75600	0.5	"	5.0000	U	95	70-130	2	25
m,p-Xylene	10.1210	1.0	"	10.000	U	101	70-130	3	25
o-Xylene	4.88200	0.5	"	5.0000	U	98	70-130	3	25
Surrogate: Bromofluorobenzene	9.89		"	10.000		99	80-120		



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Notes and Definitions

T Tentatively Identified Compound. Identified as a result of a library search using the EPA/NIST Mass Spectral Library. Standards were not used to verify the identity and quantity of the compound. The reported value is an estimate.

L The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value. Reported value is an estimate.

J The identification of the analyte is acceptable; the reported value is an estimate.

A Quality control value is outside acceptance limits.

%REC Percent Recovery

RPD Relative Percent Difference

U Analyte included in the analysis, but not detected at or above the quantitation limit.

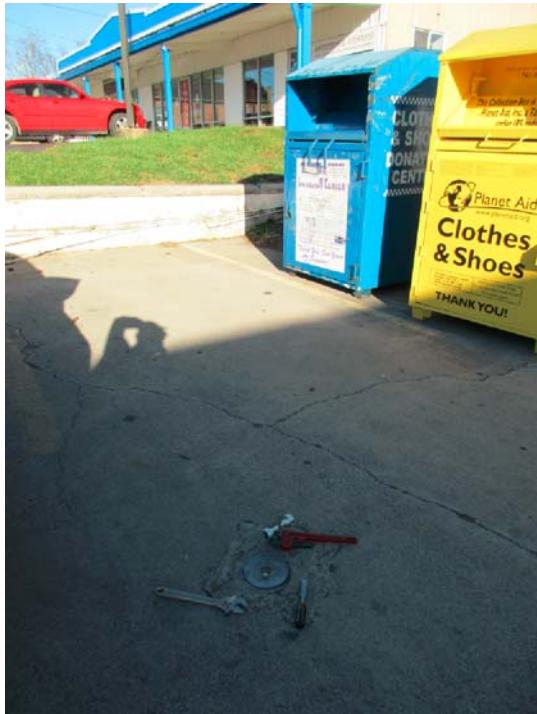
NR Not Reported

Quantitation Limit: The lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method and that takes into account analytical adjustments made during sample preparation and analysis.

SOLID SAMPLE RESULTS - REPORTING PROTOCOL: Solid samples where % Solids (percent dry wt at 105 degrees C) has been performed, are analyzed wet and converted to a dry weight result for reporting purposes. This is routine for organics and most inorganic analyses. When metals and mercury analyses are requested, solid samples are routinely analyzed and reported on a dry weight basis. Solid samples for metals/mercury are prepared for analysis by an initial drying at 60 degree C and homogenization before digestion. Oil-type samples will be analyzed and reported on a wet weight basis for all analyses because of the nature of the sample. Any exceptions to the protocol will be noted with a qualifier

ATTACHMENT 5
PHOTOGRAPHIC DOCUMENTATION

Attachment 5 - Photographic Documentation



11/13/2015
MW-1 Location.
IMG_0982.JPG



11/13/2015
MW-1 with broken bolt.
IMG_0983.JPG



11/13/2015
MW-1: Corrosion,salt between top well cover and bottom plate.
IMG_0984.JPG



11/13/2015
MW-1 bottom cover after cleaning out salt.
IMG_0985.JPG

Attachment 5 - Photographic Documentation



11/13/2015
Tools used to open MW-1.
IMG_0986.JPG



11/13/2015
Top cover, gasket and bottom plate of well cover.
IMG_0987.JPG



11/13/2015
MW-1
IMG_0988.JPG



11/13/2015
Soil Gas SG-3 location.
IMG_0989.JPG

Attachment 5 - Photographic Documentation



11/13/2015
Soil Gas SG-3 cover/vault.
IMG_0990.JPG



11/13/2015
Tubing inside SG-3.
IMG_0991.JPG



11/13/2015
Tubing inside SG-3, with crimps and tape over repairs.
IMG_0992.JPG



11/13/2015
Strip mall with HVAC Co. on northern boundary of property.
IMG_0993.JPG

Attachment 5 - Photographic Documentation



11/13/2015

Retaining wall at boundary between Site and strip mall.

IMG_0994.JPG



11/13/2015

Soil Gas SG-2 location.

IMG_0995.JPG



11/13/2015

Soil gas vault SG-2.

IMG_0996.JPG



11/13/2015

SG-2 - tubing and water in vault.

IMG_0997.JPG

Attachment 5 - Photographic Documentation



11/13/2015
Tubing inside SG-2, with crimps and tape over repairs.
IMG_0998.JPG



11/13/2015
Soil gas SG-1 location.
IMG_0999.JPG



11/13/2015
SG-1
IMG_1000.JPG



11/13/2015
Tubing inside SG-1, with crimps and tape over repairs.
IMG_1001.JPG

Attachment 5 - Photographic Documentation



11/13/2015

Tubing inside SG-1, with crimps and tape over repairs.

IMG_1002.JPG

Attachment 5 - Photographic Documentation



12/10/2015
Driving soil gas implant into ground at SV-02 sample loc...
IMG_1040.JPG



12/10/2015
Driving soil gas implant into ground at SV-02 sample loc...
IMG_1041.JPG



12/10/2015
Collecting soil gas sample SV-01 in summa canister.
IMG_1042.JPG



12/10/2015
Soil gas sample SV-01 location.
IMG_1043.JPG

Attachment 5 - Photographic Documentation



12/10/2015

Collecting soil gas sample SV-02 in summa canister.

IMG_1044.JPG



12/10/2015

Collecting soil gas sample SV-03 in summa canister.

IMG_1045.JPG

ATTACHMENT 6
NON-HAZARDOUS BILL OF LADING